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REMARKS

Claims 1-24 and 27 are pending in the application. Claims 1, 19, 21 and 24 are amended, claims 25-26 are canceled, and claim 27 is added with this response. Reconsideration of the application in light of the following remarks is respectfully requested.

I. SUMMARY OF DISCUSSION WITH EXAMINER ON JULY 9, 2003

On July 9, 2003, a call was received from the Examiner in the above application. During the discussion, the claims were discussed in light of prior art cited within the application. No resolution was reached on all claims, but resolution was reached on whether some types of amendments would distinguish over the art of record. Claims 1, 19, 21 and 24 are amended herein in accordance with the discussions highlighted above, and such claims are believed to be patentable over the cited art. Accordingly, an allowance of the pending claims is respectfully requested.

II. SUBMISSION OF INFORMATION DISCLOSURE STATEMENT

In the above discussion of July 9, 2003, the Examiner brought to applicants' attention several additional prior art references that have not been cited in the present application. In accordance with applicants' duty of disclosure, an Information Disclosure Statement citing the art at issue is provided herein.

III. NEW CLAIM 27

New claim 27 is identical to previous claim 1 prior to the amendment in the present response. More particularly, claim 27 does *not* contain a limitation that the single plasma etch process *substantially completely* remove the sacrificial material and the hard mask. It is respectfully submitted that the cited art do not teach the invention of claim 27 for at least the following reasons.

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- i. ***Neither Hemmenway et al. nor Bothra teach plasma etching to strip the sacrificial material and the hard mask in a single etch process as recited in claim 27.***

Claim 27 is directed to a method of stripping a hard mask from a substrate. The method comprises coating the substrate with a sacrificial material that fills gaps in a hard mask, and ***plasma etching to strip the sacrificial material and the hard mask in a single plasma etch process.*** Hemmenway et al. not only do not teach the above feature, but ***require*** the removal of materials be performed ***in a multi-step process.*** As averred in the Office Action, the photoresist or buffer material 51 and the hard mask 11 of Hemmenway et al. are interpreted as the recited sacrificial layer and hard mask, respectively. In discussing removal of the buffer material 51 and the hard mask 11, a ***two-step removal process is employed*** (see, e.g., Col. 3, ln. 46 - Col. 4, ln. 26). More particularly, ***Hemmenway et al. require a multi-step removal process by requiring the buffer material be selective with respect to the hard mask.*** For example, the reference states:

In the foregoing example, the only limitation on the choice of buffer material 51 is that it be selective with respect to the materials that are used for the 'hard' mask layer 11 and the buried layer 21.... (Col. 4, lns. 5-8).

Therefore not only does Hemmenway et al. not teach a single step plasma etch to strip sacrificial material and the hard mask, ***the cited reference prohibits a single step solution by requiring etch selectivity between the two materials.*** Therefore the art does not teach the claim feature, and ***one of ordinary skill in the art (upon evaluating Hemmenway et al. as a whole) would not be motivated to modify the art in accordance with the present invention because doing so would contravene the teaching therein.*** Therefore claim 1 and its associated depending claims are non-obvious over the cited art. Accordingly, withdrawal of the rejection is respectfully requested.

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ii. *Even if the cited art could be combined properly, Bothra does not teach plasma etching of a hard mask as recited in claim 27.*

The Office Action concedes that Hemmenway et al. has deficiencies, but asserts that Bothra remedies such deficiencies. More particularly, the Office Action avers that Bothra discloses a plasma etching of a hard mask layer using CHF_3/O_2 (see O.A., 4/2/03, p. 3, last paragraph). ***Bothra, however, does not utilize the silicon nitride layer 209 cited in the Office Action as a hard mask. Rather, the layer 209 is employed as an etch stop layer for the etching of an overlying dielectric layer***, as clearly seen in Fig. 5 and in the accompanying text. As seen therein, a photoresist layer 218 is employed as an etch mask to pattern the dielectric material 216, wherein the etch stops on the silicon nitride layer 209 (hence layer 209 is an etch stop). Then, as clearly seen in Fig. 6 and discussed in the accompanying text, the silicon nitride layer 209 is etched; during such etch, the photoresist mask 218 is maintained and thus the etch is selective with respect to the photoresist. Thus the photoresist mask 218 may be considered as a hard mask, not the silicon nitride layer 209. Therefore one of ordinary skill in the art, upon evaluating the teaching of Bothra as a whole, would not be motivated to combine the teachings thereof to employ the etch chemistry discussed therein for the silicon nitride etch stop layer 209 in conjunction with Hemmenway et al. which is directed to removal of the hard mask.

Further, even if such a combination were proper, such teachings would not provide the present invention since in both cases, the etch processes taught therein are directed to multi-step removal processes in direct contravention with applicants' claim language. Therefore for this additional reason, the claim at issue is non-obvious over the cited references.

IV. CONCLUSION

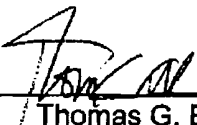
For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

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Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 50-1733, AMDP714US.

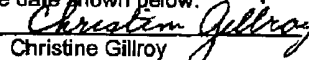
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CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the Patent and Trademark Office on the date shown below:

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